

Cyrus Longworth Lundell

Director, Plant Sciences Laboratory
 The University of Texas at Dallas
 Richardson, Texas 75083-0688

GRAPHARDISIA (Mez) Lundell, *Phytologia* 48: 139. 1981

GRAPHARDISIA COIBANA Lundell, sp. nov. — Frutex, 3 m.; ramuli crassiusculi, glabri; folia subcoriacea, petiolata, petiolo 5–20 mm. longo; lamina anguste oblanceolata, 12.5–25 longa, 3.5–6 cm. lata, apice acuminata vel caudato-acuminata, acumine ad 3.5 cm. longa, basi angusta, attenuata, longilineata, nigropunctata; inflorescentia terminalis, ad 10 cm. longa, 15 cm. lata, glabra; flores 5-meri, corymbosi; pedicelli graciles, 1.5–2 cm. longi; sepala alba, ovato-elliptica vel elliptica, ad 8 mm. longa, 4–5 mm. lata, hyalina, parce lineata, apice rotundata, margine epunctata et lata, intus eglanulifera; fructus subglobosus, ca. 5 mm. diam.

Panama: Prov. Veraguas, Playa Rosario, northern tip of Coiba Island, in forest, Aug. 26, 1970, Robin Foster 1600 (holotype, LL; isotype, F), shrub, 3 m., sepals white, pedicels pink, ripe fruit dark red. John D. Dwyer 1612 (F) and 2363 (MEXU, NY) are two additional collections (paratypes) from Coiba Island.

G. coibana is notable for its thick narrowly oblanceolate leaves rather abruptly caudate-acuminate at apex and the long slender attenuate base decurrent on the petiole. Its inflorescence and wide openly lineate thin sepals suggest a relationship to G. Seibertii (Standl.) Lundell, a species of middle altitudes in Panama and Costa Rica, which has altogether different leaves.

GRAPHARDISIA NICARAGUENSIS Lundell, sp. nov. — Arbor parva vel frutex; ramuli crassiusculi, glabri; folia chartacea, petiolata, petiolo ca. 1 cm. longo; lamina oblanceolata, 12–23 cm. longa, 4–7 cm. lata, apice subabrupte acuminata, basi anguste cuneata, lineata; inflorescentia terminalis, ad 12 cm. longa, 15 cm. lata, glabra; flores 5-meri, corymbosi; pedicelli graciles, ad 2 cm. longi; sepala obovata vel obovato-elliptica, ad 8 mm. longa, 4 mm. lata, apice rotundata, dense nigrolineata, margine nigropunctata, basi parce papillosa; fructus subglobosus, dense nigropunctatus, ca. 6 mm. diam.

Nicaragua: Dept. Zelaya, bosque lluvioso y brenoso de Montana Esquipulas, alt. 130 m., Nov. 22, 1951, Paul J. Shank & Antonio Molina R. 4719 (holotype, F; isotype, US; xerox & fragment, LL), arbol, 2–6 m.; same collectors and locality 4783 (F).

George R. Proctor et al. 27151 (NY) from Dept. Bluefields of Nicaragua is a paratype.

The rather thin leaves are oblanceolate and oblongish with a long acuminate apex and cuneate base. The lineate punctation of blades is slender and rather obscure. The most distinctive feature is the calyx which is sparsely lepidote at base within. The sepals are very notable in being obovate or elliptic, rounded at apex, and very black punctate to the very edge of the margin.

The relationship of Graphardisia nicaraguensis appears to be with Graphardisia opegrapha (Oerst.) Lundell. The latter has very slender, black lineate, shorter sepals.

GRAPHARDISIA OBTUSATA Lundell, sp. nov. — Arbor parva, 3 m.; ramuli graciles, glabri; folia petiolata, petiolo ad 1 cm. longo; lamina subchartacea, lanceolata, 7.5–12.5 cm. longa, 3–4 cm. lata, apice acuminata, basi acuta, nigrolineata, integra; inflorescentia terminalis, sessilis, paniculata, parva, ca. 4 cm. longa, 7 cm. lata; flores 5-meri, corymbosi; pedicelli graciles, ad 1.5 cm. longi; sepala lanceolata, 5–6 mm. longa, 2–3 mm. lata, apice obtusata, dense lineatopunctata, intus basi papillosa; fructus subglobosus; stylus ca. 4.5 mm. longus.

Panama: Prov. Darien, Rio Tuquesa, at middle Tuquesa Mining Company camp called Charco Peje, tropical wet forest, ca. 250 m. alt., July 8, 1975, S. Mori 7034 (holotype, LL), small tree, 3 m. tall, 4 cm. dbh.

A taxon with affinity to Graphardisia subcoriacea (Lundell) Lundell, it has longer narrower obtusate sepals more densely punctate medially, and thinner leaves. The sepals are obscurely papillate at base within.

GRAPHARDISIA OXYPHYLLA Lundell, sp. nov. — Frutex, 4 m.; ramuli crassiusculi vel graciles; folia petiolata, petiolo marginato, canaliculato, ad 9 mm. longo; lamina glabra, ovato-lanceolata, 15–26 cm. longa, ad 9 cm. lata, apice acuminata, basi acuta, dense punctata, integra; inflorescentia terminalis, paniculata, ad 10 cm. longa et lata, pedunculata; flores 5-meri, corymbosi et umbellati; pedicelli graciles, ad 1.6 cm. longi; sepala ovato-elliptica, 5–6 mm. longa, 3.5–4 cm. lata, apice rotundata, rubro-lineata, intus basi parce papillata; petala late elliptica, ad 6.5 mm. longa, ad 5 mm. lata, basi connata ca. 2 mm., intus glandulifera, apice rotundata, parce lineato-punctata; stamina ca. 3.5 mm. longa; filamenta 1–1.5 mm. longa, glabra; antherae ad 2.7 mm. longae, lanceolatae, poris apicalibus dehiscentes; stylus ca. 4.5 mm. longus.

Panama: Prov. Chiriqui, 2.5 km. from Questa Piedra along Rio Monte Road, at stream, in forest, June 27, 1977, J. P. Folsom 3975 (holotype, LL), shrub of 4 m., calyx and pedicels white, 5-lobed, corolla pale pink.

Although the sepals are described as white by the collector, after drying they are reddish-lineate, with space between the

medial lines, and punctate laterally with wide margin. On the basis of the features of the calyx, the relationship appears to be with *Graphardisia Seibertii* (Standl.) Lundell.

The large sharply acuminate leaves have short thick canalicate petioles. The relatively small flowers have very broad petals which appear to be fringed in post-anthesis condition. The filaments apparently are glabrous.

GRAPHARDISIA PURPUREA Lundell, sp. nov. — Frutex, ramuli graciles; folia membranacea, glabra, petiolata, petiolo canaliculato, 1—1.4 cm. longo; lamina integra, reticulata, glabra, lineata, oblanceolata, 8—15 cm. longa, 3—5.5 cm. lata, apice subabrupte acuminata, basi acuminata; inflorescentia terminalis, parvissima, paniculata, 2.5—3 cm. longa, purpurea, bracteata; flores 5-meri, corymbosi; pedicelli 4—6.5 mm. longi; sepala libera, obovata, ca. 5 mm. longa, 3 mm. lata, apice rotundata, basi angustata, subintegra, lamina lineata et parvipunctata; fructus subglobosus, ad 4.5 mm. diam.

Panama: Prov. Chiriqui, 6 miles N of Concepcion, Aug. 4, 1960, John E. Ebinger 751 (holotype, US; xerox & fragment, LL), shrub, 4 ft. tall, bracts purple, fruit green.

Graphardisia purpurea is notable for its small infructescence with large purple bracts, each bract subtending a pedicel in fruit. It has short pedicels, obovate thin sepals narrowed and free to the base, and rather conspicuously lineate punctation medially which is small apically. Its entire leaves have slender petioles, and both surfaces of the thin blade are finely reticulate.

The taxon appears to be related to *Graphardisia Wagneri* (Mez) Lundell, a species with conspicuously crenulate leaves, and much longer pedicels up to 1 cm. long.

GRAPHARDISIA SERANOANA Lundell, sp. nov. — Frutex, 3 m.; ramuli crassiusculi, glabri; folia petiolata, petiolo ad 5 mm. longo, marginato; lamina chartacea, dense nigrolineata, lanceolata, 8—13.5 cm. longa, 3—5.5 cm. lata, apice acuminata, basi subcuneata, integra; inflorescentia terminalis, late paniculata, ad 7 cm. longa, 10 cm. lata, glabra; flores 5-meri, corymbosi; pedicelli graciles, 1—2 cm. longi; sepala obovato-elliptica vel elliptica, 4—4.5 mm. longa, 3—3.5 mm. lata, apice rotundata, intus basi parce papillata, parce nigrolineata et punctata; corolla ad 7 mm. longa, intus basi glandulifera; petala connata ca. 2 mm., late ovato-elliptica, ad 6 mm. lata, apice rotundata, 2- vel raro 3-lineata, parce punctata; antherae ca. 3 mm. longae, lanceolatae, poris apicalibus dehiscentes; filamenta subnulla, basi glandulifera; ovarium glabrum.

Panama: Prov. Chiriqui, road from Volcan to Rio Serano; road that turns eastward 7.2 km. from Rio Serano, 3.2 km. along side road, June 29, 1977, J. P. Folsom 4029 (holotype, LL), shrub of 3 m., flowers pink-white.

Closely related to Graphardisia subcoriacea (Lundell) Lundell of Cocle Province, El Valle de Anton, Panama, Graphardisia seranoana differs in its short marginate petioles, sepals openly lineate and punctate, petals 2- or rarely 3-lineate and with scattered lateral punctation, and slightly larger subsessile anthers borne in the short thick tube at base of corolla. Graphardisia subcoriacea has sepals with dense medial black lines and denser lateral punctation, giving a black medial area as contrasted with the open linear glands of the other taxon. Also, Graphardisia subcoriacea has petals strictly 2-lineate, not 2- or rarely 3-lineate as in Graphardisia seranoana. These differences along with the subsessile anthers and marginate petioles distinguish the species.

GRAPHARDISIA SKUTCHII (Morton) Lundell, comb. nov. Ardisia Skutchii Morton, Journ. Wash. Acad. Sci. 27: 309. 1937.

GRAPHARDISIA USTUPOANA Lundell, sp. nov. — Frutex, 3 m.; ramuli graciles, glabri; folia petiolata, petiolo ad 8 mm. longo, canaliculato; folia subcoriacea, petiolata, petiolo ad 8 mm. longo, canaliculato; lamina oblongo-lanceolata vel lanceolata, 8.5—13.5 cm. longa, 3—4 cm. lata, apice acuminata, basi acuta, margine subintegra; inflorescentia terminalis, parva, paniculata, 3—4.5 cm. longa, glabra; flores 5-meri, corymbosi; pedicelli ad 2 mm. longi, graciles; sepala dense nigrolineata et punctata, ciliolata, anguste oblanceolata, ad 8 mm. longa, 3—3.5 mm. lata, intus basi parce papillata, apice rotundata.

Panama: Prov. San Blas, on mainland in front of Ustupo, overhanging river, Nov. 10, 1975, W. G. D'Arcy 9535 (holotype, LL), shrub 3 m. tall, bracts purplish white, fruit red.

Of probable affinity to Graphardisia subcoriacea (Lundell) Lundell, Graphardisia ustupoana differs in its longer oblanceolate sepals which are uniquely ciliolate. Only the calyx is present in the holotype, and flowers at anthesis are needed to better determine the relationships of the taxa.

GRAPHARDISIA WEBERBAUERI (Mez) Lundell, Wrightia 7: 46. 1982. Ardisia Weberbaueri Mez, Fedde, Rep. Nov. Spec. 3: 97. 1906. Graphardisia Vigoï (Lundell) Lundell, Phytologia 48: 140. 1981. Ardisia Vigoï Lundell, Wrightia 6: 94. 1979.

Ardisia Weberbaueri Mez is represented in the Herbarium of Field Museum by a fragment of the type, Weberbauer 1809, which contains a single flower. This flower matches the holotype flowers of Ardisia Vigoï Lundell, also from Peru, Jose Schunke Vigo 8384 (LL).

This species is the southernmost representative of the genus.

SPECIES EXCLUDED FROM GRAPHARDISIA

Two other species from South America, Ardisia albovirens Mez, Ule 9682, probably from Brazil, and Ardisia nigrovirens Macbr.,

Williams 5081 (holotype, F) from Peru, which I referred to Graphardisia (Wrightia 7: 46. 1982), appear to be species of Ardisia as described. The anthers in Ardisia nigrovirens Macbr. (see Vigo 1442) are longitudinally dehiscent, while those of Graphardisia are dehiscent by apical pores.

PARATHESIS (A.DC.) Hooker f., Bentham & Hooker f.,
Gen. 2: 645. 1876

PARATHESIS BARUANA Lundell, sp. nov. — Arbor; ramuli graciles, minute puberuli vel tomentelli; folia minute puberula, petiolata, petiolo 1—1.2 cm. longo; lamina chartacea, oblongo-lanceolata vel anguste elliptica, 8—10 cm. longa, 2.5—4 cm. lata, apice acuta vel subacuminata, basi acuta, perpunctata, margine crenulata; inflorescentia axillaris, apice paniculata, minute puberula, ad 5.5 cm. longa, longe pedunculata; flores 5-meri, corymbosi vel umbellati, minute tomentelli; sepala anguste triangularia, acuminata, ad 1.5 mm. longa, extus minute puberula; pedicelli 5—7 mm. longi; fructus subglobosus, ad 7 mm. diam., nigropunctatus.

Panama: Prov. Chiriqui, roadside to 10 km. below summit of El Baru, W. G. D'Arcy 11050 (holotype, LL), flowers pinkish, fruits reddish, tree.

Parathesis baruana resembles P. subulata Lundell of Guatemala and Chiapas, differing notably in having conspicuously crenulate mostly elliptic leaves. Its blades are densely black punctate and with short linear glands dispersed throughout. The pubescence is minute and varies from puberulent to tomentulose. The leaves are glabrous except for the puberulent petiole and midvein.